

Application No. 10/809,248
Amendment dated August 3, 2005
Reply to Office Action of March 8, 2005

REMARKS

Claims 1-7 are pending. Claim 8 and 9 are added herein. Accordingly, claims 1-9 are at issue.

The indication of allowable subject matter in claim 7 is noted with appreciation. Accordingly, claim 7 is rewritten in independent form to include the limitations of its base claim 6 so that claim 7 should now be in condition for allowance.

Claims 1-5 stand rejected under 35 U.S.C. §101 as including claimed non-statutory subject matter. Claims 1 and 2 are amended as suggested in the Action so that they no longer positively recite a device with non-statutory subject matter. Accordingly, it is believed this rejection is obviated.

Claims 1, 3 and 5 stand rejected under 35 U.S.C. §102(e) as anticipated by U.S. Publication No. 2001/0041916 to Bonutti. Claims 1-3 and 5 stand rejected under 35 U.S.C. §103(c) as unpatentable over U.S. Patent No. 6,248,106 to Ferree. Claims 1 and 3-6 stand rejected under 35 U.S.C. §103(c) as unpatentable over U.S. Patent No. 5,156,616 to Meadows et al. in view of Bonutti. Claims 1 and 3-6 stand rejected under 35 U.S.C. §103(c) as unpatentable over Bonutti in view of Meadows et al.

The rejections, as they may apply to the claims presented herein, are respectfully traversed.

Claim 1 is directed to a system for maintaining positions of bone surfaces fixed relative to each other and calls for first and second anchor members constructed to be inserted in bone portions, and first and second cables connected to the first and second anchor members, respectively. As amended, claim 1 requires the first and second anchor members each have an axial bore in which the respective first and second cables extend and are secured. The bores are configured to minimize discrete stress points on the cables extending therein and out therefrom. The relied upon art fails to disclose or suggest the system of anchor members including axial bores and cables extending therein and out therefrom, as required in amended claim 1.

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In both Bonutti and Ferree, the corresponding anchor members lack an axial bore. In Bonutti, the suture leg portions 50 and 52 extend through passages 254 and 256 in the anchor 18 that extend radially through the cylindrical body portion 250 thereof. As such, rather than extending axially along central axis 260 of the anchor 18, the passages 254 and 256 extend perpendicular thereto. Further, it can be seen that the sutures extend into and out from these passages to be bent at circular edges thereof. Thus, when the sutures are tensioned for being connected to each other, they will be heavily stressed at the edges of the passages 254 and 256.

The anchor members of Ferree also lack an axial bore in which cables extend. Instead, Ferree explicitly teaches a post 208 projecting up from an annular seating surface 206 with discs 210 and 220 received on the post clamped onto the seating surface 206 by nut 230. The cables 212 and 222 are attached to the discs 210 and 220. Further, it is apparent that the above-described construction does not adapt the screws to be fully sunk into the bone.

Meadows et al. disclose a bone screw provided with an axial bore or passageway 23. However, Meadows et al. are completely silent with respect to the problem of generating stress points on the suture thread 29 extending in the passageway 23 and out therefrom. Thus, Meadows et al. fail to disclose or suggest an axial bore that is configured to minimize discrete stress points on cables extending therein and out therefrom, as required in amended claim 1.

Accordingly, it is believed claim 1, claims 2-5 and claim 8 which depend therefrom are allowable over the relied upon art.

Further, added dependent claim 8 calls for the axial bores to each include tapered and radius surfaced portions against which the cables bear and which are configured for minimizing stress on the cables. As previously mentioned, neither Bonutti or Ferree teach axial bores. Meadows et al. do disclose a beveled portion 39 formed between central portion 24 and distal portion 25 of the passageway 23. However, Meadows et al. teach this beveled portion is for compressing the knot 27 on the suture thread 29, and otherwise is not for the purpose of minimizing stress points on the suture thread as it extends in the passageway 29

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and out therefrom. Further, there are no surfaces of the passageway 23 that are radiused as is required in dependent claim 8. For these additional reasons, added dependent claim 8 is believed allowable over the relied upon art.

Claim 6 is directed to a method of stabilizing bone portions relative to each other and calls for providing screw anchors and cables attached thereto in axial bores of the screw anchors. As amended, claim 6 calls for flexing and bending the cables in the axial bores and as the cables exit the bores of the screw anchors to minimize discrete stress points on the cables. No such flexing and bending of cables in screw anchor axial bores is disclosed or suggested by the relied upon art.

Bonutti and Ferree do not disclose axial bores in their corresponding anchors as has previously been discussed. Further, Meadows et al. do not disclose or suggest flexing and bending of the suture thread 29 in the passageway 23 and as it exits therefrom for minimizing discrete stress points on the thread. Since the Meadows et al. bone screw is specifically taught as being used for attaching ligament to closely adjacent bone (see col. 1, lines 10-15, 24-40, and 63-66; and col. 2, lines 39-46). Meadows et al. do not consider the need to bend the suture thread 29 in a direction transverse, and, specifically orthogonal to the bone screw axis. Thus, Meadows et al. do not even consider the problem of stress points on cables extending in axial bores of screw anchors and exiting therefrom, and consequently do not disclose or suggest the flexing and bending of cables in the axial bores and as the cables exit the bores for minimizing stress points thereon, as required in the method of claim 6.

Accordingly, it is believed claim 6 is allowable over the relied upon art.

Further, added dependent claim 9 calls for the cables to be flexed and bent in the axial bores by flexing the cables against a tapered surface portion in each bore and a radiused surface portion in each bore. No such teaching is present in any of the cited references. Accordingly, for this additional reason dependent claim 9 is believed allowable over the cited references.

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Based on the foregoing, reconsideration and allowance of claims 1-7, and consideration and allowance of added claims 8 and 9, are respectfully requested.

Respectfully submitted,

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